

Notice of Allowability

Application No.

10/663,177

Examiner

Monica Lewis

Applicant(s)

HUNG ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the preliminary amendment filed on 9/15/03.
2. ☒ The allowed claim(s) is/are 8-12.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/269,602.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 9/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other


Mary Wilczewski
Primary Examiner

EXAMINER'S AMENDMENT

1. This examiner's amendment is in response to the preliminary amendment filed September 15, 2003.
2. Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given via telephone by Richard P. Berg on February 3, 2005.

The application has been amended as follows:

In the specification, page 1 line 1 after "EPROM", "AND METHOD FOR FORMING THE SAME" has been deleted.

In the specification, page 1 line 1 after "EPROM", "--CELLS COMPATIBLE WITH CMOS PROCESSING--" has been inserted.

In the specification, page 5 line 18 after "FIG.", "6C" has been deleted.

In the specification, page 5 line 18 after "FIG.", "--5C--" has been inserted.

In the specification, page 5 line 20, "--FIG. 10 shows a programming operation. FIG. 11 shows a reading operation.--" has been inserted.

Reasons for Allowance

3. The following is an examiner's statement of reasons for allowance:
In regards to claim 8, the prior art fail to disclose the following: a) a pair of selective gates disposed on a gate oxide layer and an isolation region, wherein the pair of selective gates are

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striped and perpendicular to the striped active area; b) a pair of floating gates disposed on the gate oxide layer, and are corresponding to the active area, wherein a gap is formed between the pair of floating gates and the pair of selective gates; c) a well of second conductive type disposed in the deep well of first conductive type below the pair of selective gates and the pair of floating gates; d) a pair of sources disposed on both sides of the well of second conductive type, the pair of sources connected to each other via the deep well of first conductive type; and e) a drain disposed in the well of second conductive type between the pair of selective gates.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the feature(s) canceled from the claim(s): a) an isolation region disposed in the substrate (For Example: See Claim 8; b) a deep well of first conductive type located under the isolation region and the striped active area (For Example: See Claim 8); c) a pair of floating gates on the gate oxide layer (For Example: See Claim 8); d) a pair of selective gates on the gate oxide layer and the isolation region, wherein the pair of gates are striped (For Example: See Claim 8); and e) the

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pair of sources are laterally extended to half the width of the pair of floating gates (For Example: See Claim 12). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to because it does not appear that there is a drawing that discloses the structure disclosed in claim 8. Figure 9A appears to be the closest. However, the following is not disclosed: a) an isolation region disposed in the substrate; b) a deep well of first conductive type located under the isolation region and the striped active area; c) a pair of floating gates on the gate oxide layer (Note: It appears that there is only one.); d) a pair of selective gates on the gate oxide layer and the isolation region, wherein the pair of gates are striped (Note: It appears that there is only one and it is not striped.); e) a pair of sources (Note: It appears that

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there is only one.); and f) a drain disposed between the pair of selective gates (Note: The drain is not between a pair of selective gates.). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Conclusion

7. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure: a) Liu et al. (U.S. Patent No. 6,326,265) discloses an EPROM; b) Lin et al. (U.S. Publication No. 2002/0110020) discloses a flash memory cell; and c) Ogura et al. (U.S. Patent No. 6,133,098) discloses flash memory.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722 for regular and after final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ML
February 7, 2005



Mary Wilczewski
Primary Examiner